

NOTES ON SOME LAND PLANARIANS COLLECTED  
BY THOS. STEEL, ESQ., F.C.S., IN THE BLUE  
MOUNTAINS, N.S.W.

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The specimens upon which the present notes are founded were collected for me by Mr. Thos. Steel at Blackheath and Wentworth Falls, and were sent to me partly alive and partly in spirit, together with notes on the living animals. I wish to express my most sincere thanks to Mr. Steel for the great amount of time and trouble which he has expended in obtaining the specimens, which I particularly desired for the purpose of comparison with the Victorian species. In all nine species were obtained, of which seven are known to be represented in Victoria by identical or slightly varietal forms. Of the two remaining one has been found in Tasmania (*G. variegata*), and has therefore probably as yet simply escaped observation in Victoria, while the other (*R. moseleyi*) is represented in Victoria by a closely allied if not specifically identical form (*R. simulans*). The most interesting forms in the collection are varieties of *Rhynchodemus victoria* and *Geoplana fletcheri*, which seem worthy of varietal names, while a variety of the Victorian *G. quadrangulata* is also abundant. None of these three species have hitherto been recorded from New South Wales. The remaining six species are already more or less well known in New South Wales from the writings of the late Professor Moseley and Messrs. Fletcher and Hamilton.

I have at length ventured to revise the nomenclature of the common and widely distributed *Geoplana sanguinea*, which has been described under a different name by nearly every writer who

has dealt with it. The reasons for this confusion lie in its variability in colour, the absence of definite markings, and the poorness of the original description.

GEOPLANA SANGUINEA, Moseley, sp.

*Cænoplana sanguinea*, Moseley, Quart. Journ. Micr. Sci. Vol. xvii. N.S. p. 285; *Rhynchodemus testaceus*, Hutton, Trans. N.Z. Inst. Vol. xii. p. 277; *Geoplana sanguinea*, Fletcher and Hamilton, Proc. Linn. Soc. N.S.W. Ser. 2, Vol. ii. p. 363; *Geoplana rubicunda*, Fletcher and Hamilton, *loc. cit.* p. 370; *Geoplana alba*, Dendy, Trans. R.S. Victoria, Vol. ii. Part 1, p. 75, &c.

Mr. Steel obtained many specimens of this much-named species from Blackheath and also found it at Wentworth Falls. The specimens differ in no wise from those common in Victoria and also found in New Zealand, the usual colour being rich Indian red all over the dorsal surface and nearly white ventrally.

GEOPLANA CÆRULEA, Moseley, sp.

*Cænoplana cærulea*, Moseley, Quart. Journ. Micr. Sci. Vol. xvii. N.S. p. 285.

I received specimens of this common species alive from Blackheath and in spirit from Wentworth Falls. The living specimens had the usual narrow yellow stripe and pink tip, and the latter feature is still shown by those preserved in spirit. All the specimens showed an ill-defined paler streak of the ground colour towards each margin of the dorsal surface, which I believe to be commonly present in the species.

GEOPLANA SULPHUREA, F. & H.

*Geoplana sulphureus*, Fletcher and Hamilton, Proc. Linn. Soc. N.S.W. Ser. 2, Vol. ii. p. 365.

Numerous typical examples of this species were sent to me from Blackheath. The ground colour was yellow, with four nearly black stripes on the dorsal surface, the outer pair being much broader than the inner. The yellow ground colour appeared

paler between the stripes than on the sides and ventral surface and came out very freely in spirit. The specimens were all much smaller than is usually the case with the closely related Victorian species (or variety) *G. hoggii*.

GEOPLANA QUINQUELINEATA, F. & H.

*Geoplana quinque-lineata*, Fletcher and Hamilton, Proc. Linn. Soc. N.S.W. Ser. 2, Vol. ii. p. 366.

I received several typical specimens of this widely distributed species both from Wentworth Falls and Blackheath. In life the ground colour was yellow, with five narrow brown stripes.

GEOPLANA VARIEGATA, F. & H.

*Geoplana variegata*, Fletcher and Hamilton, Proc. Linn. Soc. N.S.W. Ser. 2, Vol. ii. p. 364.

This beautiful and well-characterised species was found both at Wentworth Falls and Blackheath, and I received numerous specimens both alive and in spirit. The prevailing tint of the markings was brown on a yellow ground.

GEOPLANA FLETCHERI, var. BOREALIS nov.

*Geoplana fletcheri*, Dendy, Trans. Roy. Soc. Vic. Vol. ii. Part 1, p. 78, &c., &c.

This is a very handsome and well-marked variety, almost worthy of a distinct specific name except for the known variability of the species.\* It is characterised (1) by the entire absence of speckles from the yellow ground colour, except just along the margins, (2) by the presence of three very intense and bold, sharply defined black stripes, a median very narrow one and a pair of broad ones each half way between the median one and the margin.

There are six specimens, collected at Blackheath, and all exactly alike in markings except as regards the amount of the brown marginal speckling. In the peculiar shape of the body,

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\* *Vide* Dendy, Proc. R.S. Vic. 1893, p. 186, Pl. x. where a number of the pattern varieties are figured.

which is convex ventrally in spirit and usually broader behind than in front, and in the characteristic posterior position of the genital aperture, this variety agrees closely with the typical form of the species.

The species has not hitherto been recorded from New South Wales.

*GEOPLANA QUADRANGULATA*, Dendy, var.

*Geoplana quadrangulata*, Dendy, Trans. R.S. Victoria, Vol. ii. Part 1, p. 77, &c.

A considerable number of specimens of this species were sent to me from Blackheath. They differ from the type of the species as originally figured in the more speckled character of the dorsal and lateral surfaces, the greater breadth of the median dorsal black stripe, and the concentration of the speckles towards the margins of the dorsal surface to form a pair of more or less well-defined, narrow dark stripes. The dorsal surface in spirit specimens is also more convex than in the typical form, and the section therefore less markedly quadrangular. They closely resemble my *G. quadrangulata* var. *wellingtoni*, from Mount Wellington, Gippsland, Victoria, but attain a much larger size, one specimen being 46 mm. long when crawling. They also form an interesting connecting link between the typical *G. quadrangulata* and the common New Zealand species which I have named *subquadrangulata*, and which is distinguished chiefly by the much stronger development of the paired stripes, far surpassing that of the median one.

As suggested to me by Mr. Steel, the specimens collected by him also make a near approach to Messrs. Fletcher and Hamilton's description of their *Geoplana ornata*, but they certainly differ much in appearance from their figure.

*RHYNCHODEMUS MOSELEYI*, F. & H.

*Rhynchodemus moseleyi*, Fletcher and Hamilton, Proc. Linn. Soc. N.S.W. Ser. 2, Vol. ii. p. 371.

With considerable hesitation I refer to this species two small specimens described as follows by Mr. Steel :—"Length of largest

specimen when crawling about 40 mm., breadth 1 to  $1\frac{1}{2}$  mm. Ventral surface uniform light ashy grey. Dorsal surface uniform black. No stripes on either surface. Eyes two, usual position, conspicuous. Same specimen in spirit, length 38 mm., breadth 3 mm." To this I may add that in spirit the peripharyngeal aperture in one specimen is situate near the hinder end of the middle third, and the genital aperture rather nearer to the posterior end than to the peripharyngeal. Another specimen in spirit shows a distinct median longitudinal stripe of darker tint on the dorsal surface.

Obviously the specimens approach more nearly Messrs. Fletcher and Hamilton's *R. obscurus* than to their *R. moseleyi*, but I am forced to the conclusion that the distinction between most of the described Australian species of *Rhynchodemus* is too slight to be maintained, and that the first name, *R. moseleyi*, will probably have to cover at any rate *R. obscurus*, *R. trilineatus* and *R. niger* of Messrs. Fletcher and Hamilton, and perhaps also my own Victorian *R. simulans*.

The localities of Mr. Steel's specimens are Blackheath and Wentworth Falls.

RHYNCHODEMUS VICTORIÆ, var. STEELII, nov.

*Rhynchodemus victoriæ*, Dendy, Trans. R.S. Victoria, 1890, p. 79.

When crawling about 35 mm. long and 1.5 mm. broad. Eyes two as usual, very near the anterior end, in the broad bands of dark ground colour and therefore difficult to distinguish.

Ground colour of dorsal surface ashy black, with three pairs of very narrow stripes of pinkish white, arranged as follows:—One pair encloses a narrow median band of ground colour of about the same width as themselves. Outside these on each side comes a broad band of ground colour extending nearly to the margin; then another narrow stripe of pinkish white like the preceding; then a band of ground colour about twice as broad as the white stripe; then another narrow pinkish white stripe as before, and then, on the margin, a narrow band of dark ground colour not

very much wider than the pinkish white stripes. The ground colour of the ventral surface is ashy grey with three stripes of pinkish white, a median one of moderate width and a marginal one on each side of little more than half the width. The intervening band of ground colour on each side is only a little wider than the median white stripe.

In living specimens all the light stripes are very clear and distinct, and persistent to both extremities. In spirit they lose their pinkish tint but remain plainly visible.

In spirit the body is long and narrow, convex above and flattened below, rounded in front and much more pointed behind, about 24 mm. in length by 2.5 mm. in greatest breadth. The peripharyngeal aperture is situated a little behind the middle of the ventral surface and the genital aperture a little nearer to it than to the posterior extremity. The pharynx, as exerted in spirit, is narrow and cylindrical.

I received from Mr. Steel four well-preserved specimens of this worm collected under logs at Wentworth Falls, together with his notes on the living animal. He also sent me two specimens in spirit from Blackheath, which he thought might be Messrs. Fletcher and Hamilton's *Rhynchodemus coxii*. It appears to me certain, however, that one at any rate of these belongs to *R. victorie*, var. Moreover Mr. Fletcher informed me some years ago that *Rhynchodemus coxii* is really a *Geoplana*.

This new variety bears a close resemblance to the type of *R. victorie*, from Croajingolong, which I described in 1890 from a single specimen only.\* It differs from it, however, in the presence of an additional pair of narrow white stripes on the dorsal surface.

I have much pleasure in associating the name of the discoverer with this new variety, as a slight recognition of the valuable assistance which he has repeatedly rendered me in my investigations on the Cryptozoic Fauna of Australia.

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\* The Victorian Land Planarians. Trans. R.S. Victoria, 1890, p. 79.